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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,818	12/11/2003	Regis Lardennois	P08130US00/RFH	5884
881	7590	05/22/2006	EXAMINER	
STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314			HERRERA, DIEGO D	
			ART UNIT	PAPER NUMBER
			2617	

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/732,818

Applicant(s)

LARDENNOIS ET AL.

Examiner

Diego Herrera

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

#### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/17/2006 has been entered.

#### ***Claim Objections***

Claim 1 is objected to because of the following informalities: Claim 1 is a system claim however does not claim any components, pieces, or means, that performs what appears to be the applicants intended novel feature.

Appropriate correction is required.

Examiner comment:

Claim 1 uses functional language to describe what the infrastructure components are intended to do. For example in claim 1, the claim does claim several infrastructure components however says the infrastructure components are “**controlled in such a manner**” to do the intended novel function. Such language leaves the claim broad in that the limitations will read upon any reference that has the claimed components because the components could inherently be controlled to perform the function, if it can be shown that the function is available for use. A more active component such as “**a controller controlling the transceivers to**” more explicitly describes the invention that it performs the function. If, however, the specification does not support such a component than maybe a method claim is more appropriate.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-3 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Wakayama et al. (**U.S. patent #: 6,130,905**).

Regarding claim 1, Maki et al. discloses a cellular system (**FIG. 4**) for transmitting information by radio (Abstract "accommodating a plurality of mobile stations through **radio transmission channels**") between and infrastructure and mobiles constrained to travel on a determined path, the infrastructure comprising stationary transceiver stations (**FIG. 4, base stations (400a)-(400c)**) distributed along the path and allocated to successive cells, and each mobile carrying a transceiver (**FIG. 4, col. 2, lines: 47- 49, note: transceiver is an inherent part of a mobile station**), the transceivers of the stationary stations and the transceiver carried by each mobile are controlled in such a

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manner that, while a mobile is in a given cell, exchanges between the mobile and the transceivers allocated to the given cell take place in alternation during two successive radio cycles (FIG. 4, note: downlinks and uplinks of one T period between  $t_0$  to  $t_1$  then a successive downlinks and uplinks of one T period between  $t_1$  to  $t_2$ ) so that for a radio communication from the mobile and the transceivers allocated to the cell lasting a plurality of cycles (Fig. 4, Maki teaches the uplink and downlink in multiple cycles communicating with the unit to the base station cell), the communication takes place at a first frequency during a first frequency during a first radio cycles (fig. 4, col. 2 lines: 40-50, Maki teaches the alternation of communication between a first frequency during a first radio cycle as shown).

However, Maki et al. does not specifically disclose two different frequencies alternating between each other in a radio cycle as discussed by applicant: at a second different frequency during the next radio cycle, at the first frequency during the next radio cycle at the second frequency during the next radio cycle and so on, depending on the number of radio cycles, in a repeating pattern alternating between said first and second frequency.

In the same field of endeavor, Wakayama et al. clearly shows and discloses two different frequencies alternating between each other in a radio cycle as discussed by applicant: at a second different frequency during the next radio cycle, at the first frequency during the next radio cycle at the second frequency during the next radio cycle and so on, depending on the number of radio cycles, in a repeating pattern alternating between said first and second frequency and discloses two

different frequencies (see col. 10, lines 5-27, where Wakayama discusses hopping between two frequencies in cycles).

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the invention of Maki, and have disclose two different frequencies alternating between each other in a radio cycle as discussed by applicant: at a second different frequency during the next radio cycle, at the first frequency during the next radio cycle at the second frequency during the next radio cycle and so on, depending on the number of radio cycles, in a repeating pattern alternating between said first and second frequency, as taught by Wakayama, thus having a communication system with increased effectiveness, as discussed by Wakayama (col. 1 lines: 10-17).

Regarding claim 2, and as applied to claim 1 above, as modified by Wakayama, Maki et al. shows and discloses each cycle constituted by a plurality of short exchange frames (**FIG. 4, col. 8, lines: 20-31, note: each cycle, denoted by 'T', is constituted by a plurality of short exchange frames, that are denoted by squares called slots by Maki et al.**).

Regarding claim 3, and as applied to claim 1 above, as modified by Wakayama, Maki shows using a time division multiple access mode of transmission (**FIG. 4,col. 3, line 30, "slot position" and "time-division multiplexed (TDMA) channel slots"**).

2. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Wakayama et al. (**U.S. patent #: 6,130,905**) and further in view of Delprat et al. (**U.S. patent #: 5,617,412**).

Regarding claim 4, Maki et al. and Wakayama et al. disclose the claimed invention as applied to claim 1 above; however, they do not disclose frames containing essential information always transmitted on two frequencies in succession.

However, Delprat et al. discloses frames containing essential information always transmitted on two frequencies in succession (**col. 5, lines: 2-8, note that it is inherent that 'essential information' is being transmitted**).

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Wakayama for having frames containing essential information always transmitted on two frequencies in succession by adding Delprat for the purpose of effective communication of information with out the loss of essential frames of data (**col. 5, lines: 2-10, note it is by inherency that 'essential information' will be transmitted**).

3. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Wakayama et al. (**U.S. patent #: 6,130,905**) and further in view of Anderson et al. (**U.S. patent #: 6,094,575**).

Regarding claim 5, Maki et al. and Wakayama et al. disclose the claimed invention as applied to claim 1 above; however, they do not disclose a pair of frequencies used in a cell that is constituted by two frequencies that are different from the frequencies used in the adjacent cells.



However, Anderson et al. discloses a pair of frequencies used in a cell that is constituted by two frequencies that are different from the frequencies used in the adjacent cells (**col.6, lines: 31-39**).

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Wakayama to include a pair of frequencies used in a cell that is constituted by two frequencies that are different from the frequencies used in the adjacent cells by adding Anderson for the purpose of minimizing the interference between adjacent cells (**col. 6, lines: 38-39**).

4. Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Wakayama et al. (**U.S. patent #: 6,130,905**) and further in view of Kojima et al. (**U.S. patent #: 5,323,446**).

Regarding claim 6, Maki et al. and Wakayama et al. disclose the claimed invention as applied to claim 1 above; however, they do not disclose a protocol for allocating time slots when entering a cell by a base station in response to sending an entry identification to the base station.

However, Kojima et al. discloses TDMA (**col. 2, line: 5**) and a protocol for allocating time slots (**col. 2, lines: 6-12**) when entering a cell by a base station in response to sending an entry identification (**Fig. 1, note the base station areas (30<sub>1</sub>-30<sub>n</sub>) are being interpreted as the cell areas, note that the word 'threshold' is interpreted by examiner as 'entry identification', Abstract: "a threshold to determine whether a handoff is to be performed to a second, adjacent base station (cell)."**) to the base station.

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Wakayama by having TDMA and a protocol for allocating time slots when entering a cell by a base station in response to sending an entry identification by adding Kojima for the purpose of access to the wayside base station to start or continue communication in a remote way (**col. 2, lines: 18-25**).

5. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Wakayama et al. (**U.S. patent #: 6,130,905**) and further in view of Kojima et al. (**U.S. patent #: 5,323,446**) as applied to claim 6 above and further in view of Bruckert et al. (**U.S. patent #: 5,548,808**).

Regarding claim 7, the combination Maki/Wakayama/Kojima disclosed a system according to claims 1 and 6:

The combination Maki/Wakayama/Kojima does not disclose an exit from a cell is detected by a repeated failure of a response to a request made by the base station.

Bruckert discloses an exit from a cell that is detected by a repeated failure of a response to a request made by the base station (**Abstract: “the power of a first signal is measured and is compared with a threshold...if the first or second signal (up and down link) fails to meet the handoff threshold, the first or second, respectively, will discontinue serving the subscriber.” note threshold request and the lack of response will determine the end of information being transmitted by a cell to a mobile unit, this is interpreted by the examiner to mean ‘the exit’.**)

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Wakayama/Kojima to have an exit from a cell that is detected by a repeated failure of a response to a request made by the base station by adding Bruckert for the purpose of completing transaction of information between the cell and mobile thus avoiding poor quality of signal range and quality of information (**Abstract: 'will discontinue serving the subscriber'**).

6. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Wakayama et al. (**U.S. patent #: 6,130,905**) as applied to claim 1 and further in view of Lardennois (**U.S. patent #: 5,995,845**).

Regarding claim 8, the combination of Maki/Wakayama disclosed a system according to claim 1:

The combination Maki/Wakayama does not disclose, the train has two car radio units, one placed at the front and the other placed at the back, and designed to enable the two units to be handed over from one cell to another independently and in succession.

Lardennois discloses the train has two car radio units, one placed at the front and the other placed at the front and the other placed a the back, and designed to enable the two units to be handed over from one cell to another independently and in succession (**col. 2, lines 4-10**).

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Wakayama for the train to have two car radio units, one placed at the front and the other placed at the placed at the

back, and designed to enable the two units to be handed over from one cell to another independently and in succession by adding Lardennois for the purpose of tolerating possible failure of one the transmitter/receiver (col. 2, lines: 18-25).


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diego Herrera whose telephone number is (571) 272-0907. The examiner can normally be reached on Monday-Friday, 6:30AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kincaid G. Lester can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D.H.

  
LESTER G. KINCAID  
SUPERVISORY PRIMARY EXAMINER